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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020.763	12/12/2001	Vijay A. Deshpande	12801.0080.NPUS00	8658

26361 7590 12/19/2003

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EXAMINER

DOROSHENK, ALEXA A

ART UNIT PAPER NUMBER

1764

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/020,763

Applicant(s)

DESHPANDE, VIJAY A.

Examiner

Alexa A. Doroshenk *ad*

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1 and 13 is/are rejected.
- 7) ☒ Claim(s) 2-12 and 14-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Collins et al. (5,458,857).

Collins et al. discloses an apparatus for converting a hydrocarbon fuel feed (468) into hydrogen rich gas (476), comprising a processor assembly containing multiple concentric vessels (see figure 4 and col. 8, lines 23-53) for converting the hydrocarbon fuel feed into the hydrogen rich gas wherein the hydrogen rich gas is suitable for direct feed to a fuel cell (col. 1, lines 7-9).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vartanian (4,943,493) in view of Janda et al. (5,927,063).

Vartanian discloses a fuel processor for converting a hydrocarbon fuel feed into hydrogen rich gas (col. 2, lines 9-11) comprising:

a reforming module (6) for converting the hydrocarbon fuel feed (4) into hydrogen rich gas (8), wherein the hydrogen rich gas (via line 8) is suitable for direct feed (see figure) to a fuel cell (15); and

an oxidizing module (20) for oxidizing fuel cell (15) anode (10) tail gas (16) to produce a hot exhaust gas (30).

Vartanian does not disclose wherein the hot exhaust preheats the hydrocarbon fuel feed to the reforming module.

Janda et al. discloses a highly efficient hydrocarbon reformation apparatus and teaches the efficiency can be improved greatly by preheating the fuel to be reformed (col. 1, lines 17-23) and further teaches that a highly efficient heat exchange medium for the preheating can be hot exhaust gases (col. 4; line 66- col. 5, line 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the hot exhaust gas of Vartanian for preheating of the hydrocarbon feed in order to improve the efficiency of the apparatus as taught by Janda et al.

***Allowable Subject Matter***

5. Claim 21 is allowed.
6. Claims 2-12 and 14-20 are objected to as being dependent upon a rejected base claim, but would be allowable if claims 2, 14 and 16 were rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter: Though the prior art does teach hydrocarbon reformation with reforming, desulfurization, shift and preferred oxidation vessels, the prior art neither teaches nor

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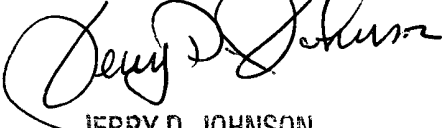
suggests a formation wherein the specified reactions are arranged in the concentric manner as claimed.

**Conclusion**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
JERRY D. JOHNSON  
PRIMARY EXAMINER  
GROUP 1100

AAD

December 13, 2003